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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of

BRISCOE et al. Atty. Ref.: 36-1384

Serial No.: 09/674,706 Group Art Unit: 3624

Filed: November 6, 2000 Examiner: Akers, G.

For: COMMUNICATIONS NETWORK

January 7, 2004

APPEAL BRIEF

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Appellant hereby appeals the Final Rejection of May 7, 2003.

REAL PARTY IN INTEREST

The real party in interest is the assignee, British Telecommunications public limited company, a corporation of Great Britain.

RELATED APPEALS AND INTERFERENCES

The Appellant, the undersigned, and the assignee are not aware of any related appeals or interferences which will directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

STATUS OF THE CLAIMS

Claims 1, 4-30, 32-33 and 39 remain pending in this application. Claims 1, 4-30, 32-33 and 39 stand rejected by the Examiner, the rejections of which are appealed.

STATUS OF ANY AMENDMENT FILED SUBSEQUENT TO FINAL REJECTION

An Amendment under Rule 1.116 was filed on August 29, 2003. By that Amendment, arguments were presented traversing the Examiner's rejections under 35 U.S.C. §103 and claims 31 and 37 were canceled.

An Advisory Action was issued on October 16, 2003 as paper no. 14. The Advisory Action indicates that "The proposed amendment(s) will not be entered because: they are not deemed to place the application in better form for appeal by material reducing or simplifying the issues for appeal." Appellant respectfully disagrees. The only changes to the claims presented in the August 29, 2003 Amendment was the cancellation of claims 31 and 37. The cancellation of these claims clearly reduces or simplifies issues for appeal.

Appellant has filed another Amendment under Rule 1.116 concurrently with the filing of this Appeal Brief. This concurrently filed Amendment again cancels claims 31 and 37 and thus clearly reduces or simplifies issues for appeal. This Amendment also

corrects a minor error in claim 30. Entry of this Amendment is in order. Now canceled claims 31 and 37 do not form a part of this appeal and are thus not presented in the Appendix of Claims on Appeal at the end of this Appeal Brief.

The claims as presented in the Appendix to this Brief include claims 1, 4-30, 32-33 and 39. The claims as presented in the Appendix to this Brief are as amended by the Amendments filed November 6, 2000 and February 24, 2003 and the concurrently filed Amendment.

CONCISE EXPLANATION OF THE INVENTION

The present invention relates to a method and system of operating a communications network. The communications network includes a plurality of customer terminals and a network operator. Each of the customer terminals measures an amount of usage of network resources. A network usage charge is calculated from the amount of usage measured at each customer terminal.

The network operator samples part of the traffic communicated between a particular customer terminal and the remainder of the network. The sampled traffic is then compared with the measured network usage or calculated charge made at that particular individual customer terminal. Any discrepancies between the sampled traffic and the measured network usage data or calculated charge reported from the customer terminal to the network operator can then be detected.

It is beneficial to minimize the amount of traffic flowing through a communications network which is purely for the purpose of measuring network usage by customer terminals so that they can be billed on a basis of their usage. Minimizing such traffic can be achieved by having at least some of the load needed to calculate the billing being performed at each customer terminal. Unfortunately, allowing the network usage to be measured at each customer terminal makes the data susceptible to a user interfering with measurement data taken at an individual customer terminal in an attempt to defraud the network operator. By sampling the actual network traffic of an individual customer terminal and checking for any discrepancy between the sampled traffic and the network usage or calculated charge reported by the customer terminal, attempts to defraud the network operator can be limited.

The present invention also relates to a method of operating a packet network which provides a plurality of different service levels. The packet network includes a packet router for passing packets. The packet router determines a classification of the packets and schedules packets differently depending on the determined packet classification. At a location remote from the packet router, the different service levels of packets are policed to determine the eligibility of a packet for a respective service class.

Policing service class levels of packets to determine the eligibility of a packet for a respective service class provides a basis for a packet network in which it is not necessary to police every packet. This makes it easier to implement a multi-service network, i.e.,

one in which different packets may be scheduled differently according to which service class applies. No policing is required directly at the packet router.

The present invention also relates to a method of determining an edge price for data transmission between a first domain and an adjacent domain. The first domain sets a price for receiving data from the adjacent domain and a price for transmitting data into the adjacent domain. The adjacent domain sets a price for receiving data from the first domain and a price for transmitting data into the first domain. An edge price for data transmission between the two domains is calculated based on the set prices. For example, an edge price for data transmitted from the adjacent domain into the first domain can be calculated by determining the difference in the price charged by the first domain for receiving data from the adjacent domain and the price charged by the adjacent domain for transmitting data to the first domain. Alternatively, the edge price for data transmitted from the first domain into the adjacent domain may be calculated by calculating the difference between the price charged by the first domain for transmitting data into the adjacent domain and the price charged by the adjacent domain for receiving data from the first domain. The calculation of the edge price thus depends on the direction of the data transmission (i.e., from the first domain into the adjacent domain or vice versa). Different sets of prices corresponding to different respective classes of service may be charged by the first domain and/or the adjacent domain. The payment for traffic in any

one direction across an interface between two adjacent domains thus depends on the difference between the prices offered by the domain on either side of the interface.

The present invention also relates to a method of operating a communications network including an originating customer, a destination customer, a clearing entity and network operator. The originating customer establishes data flow to the destination customer. The network operator communicates tariff data to a clearing entity. The clearing entity communicates the tariff data for end-to-end flow to the originating and/or destination customers. The quantity of data flowing from the originating customer into the network and quantity of data flowing out of the network to the destination customer is measured. The measured data is communicated to the clearing entity. The clearing entity calculates a charge from the measurement data and the tariff. The clearing entity then makes payment to the network operator in accordance with the calculated charge. The clearing entity communicates a bill in accordance with the end-to-end tariff to the originating customer and/or the destination customer.

CONCISE EXPLANATION OF THE ISSUES PRESENTED FOR REVIEW

Whether claims 1, 4-30, 32-33 and 39 are made "obvious" under 35 U.S.C. §103(a) based on Takeuchi (U.S. Patent No. 5,978,456) in view of Dent (U.S. Patent No. 6,098,878).

WHETHER THE CLAIMS STAND OR FALL TOGETHER

Claims 1, 4-23, 30, 32-33 and 39 stand or fall together and do not stand or fall with any other claim.

Claims 24-25 stand of fall together and do not stand or fall with any other claim.

Claim 26 stands or falls alone and does not stand or fall with any other claim.

Claims 27-28 stand or fall together and do not stand or fall with any other claim.

Claim 29 stands or falls alone and does not stand or fall with any other claim.

The specific reasons for each of the above groups of claim(s) standing or falling together or alone is provided below in the section entitled "Arguments with Respect to the Issues Presented for Review."

ARGUMENTS WITH RESPECT TO THE ISSUES PRESENTED FOR REVIEW

Claims 1, 4-30, 32-33 and 39 are not made "obvious" under 35 U.S.C. §103(a) based on Takeuchi in view of Dent.

In order to establish a prima facie case of obviousness, all of the claimed limitations must be taught or suggested by the prior art. Appellant respectfully submits that the combination of Takeuchi and Dent fails to teach or suggest all of the claimed limitations. For example, Appellant submits that the combination fails to teach or suggest determining a class of service for packets in a packet router, scheduling packets differently depending on the respective class of service, and policing the class of service

levels of packets at a location remote from the router to determine the eligibility of a packet for a respective class of service as required by independent claim 26. The Final Office Action states "Takeuchi discloses relays (routers) according to instructions from calling terminals (Fig 2/7) and data transmission through pluralities of networks which involve routing (Fig 3)...." (See page 4, lines 4-6 of the Final Office Action). Even assuming *arguendo* that this is true, there is no teaching in Takeuchi and/or Dent of a router determining a class of service of packets and policing the class of service levels of packets at a location remote from the router as required by independent claim 26. It appears that the above-cited passage is the only part of the Final Office Action which is specifically directed toward claim 26. The Final Office Action fails to even specifically discuss the above features recited in claim 26. Appellant thus requests further discussion of the Examiner's position if the rejection of claim 26 is maintained.

Independent claim 27 requires, *inter alia*, calculating an edge price for data transmission between two domains. Appellant submits that neither Takeuchi nor Dent discloses this claimed feature. The Final Office Action apparently alleges that Figs. 7-8 and/or Figs. 11-16 of Takeuchi discloses edge price determination. (See page 4, lines 4-7 of the Final Office Action). Appellant respectfully disagrees with this allegation. For example, Figs. 7-8 merely disclose determining a charging unit price, not an edge price. If the rejection of claim 27 over Takeuchi and Dent is maintained, Appellant respectfully requests that the next Office Action indicate which specific part(s) of Figs. 7-8 and/or 11-

16 discloses edge price determination between two domains as required by independent claim 27.

Independent claim 29 requires, *inter alia*, measuring a quantity of data flowing from an originating customer into the network and a quantity of data flowing out of the network to a destination customer. Appellant respectfully submits that the combination of Takeuchi and Dent fails to teach or suggest this claimed feature. The Final Office Action does not even appear to specifically allege that Takeuchi and Dent teaches or suggests this feature. That is, it is unclear to Appellant which portion(s) of Takeuchi and Dent are being relied upon and how the teachings of Takeuchi and Dent are being combined to reject claim 29. Appellant thus requests elaboration of the rationale used to reject claim 29.

Independent claim 1 requires sampling the usage of network resources by an individual terminal and comparing a measurement of this sampled usage with measurements or calculations made by the individual terminal. A goal of the invention of claim 1 is to try to minimize the amount of traffic flowing through a network which is purely for the purpose of measuring network usage by users so that they can be billed on the basis of their usage. The invention of claim 1 resolves this technical problem by performing at least some of the work at each terminal. Unfortunately, this solution is susceptible to a user interfering with the measurements taken at their own respective terminal in an attempt to defraud the network operator. The invention of claim 1 avoids

this problem by sampling the actual network usage of the individual terminal and checking that it does indeed correspond to the usage and/or charge reported by the corresponding terminal.

Neither Takeuchi nor Dent discloses performing the measurement of network usage for the purposes of billing users by a network operator, except in the conventional centralized manner. Neither of these references therefore teaches or suggests performing sampling of the network usage of an individual terminal and comparing this with measurements of usage and/or charge reported by the corresponding terminal.

The Final Office Action alleges that "Comparison methods taught by Dent against known critical values provide a means of verification monitoring (col 2 line 44 - col 3 line 15)." (See page 4, lines 1-2 of the Final Office Action). Appellant respectfully disagrees with this allegation. The above cited portion of Dent discloses comparing measured communication units used by a communications terminal to a critical value to generate an indication of economic efficiency for the user not as a "means of verification monitoring," as alleged. For example, a warning icon or audible warning may be provided during a call as an indication of economic efficiency to allow the user to end a call session and avoid excessive charges. (See, e.g., col. 7, lines 17-27 of Dent).

The Final Office Action also alleges that "Dent further teaches sampling the usage of network resources by a terminal and comparing a measure of this sampled usage with measurements made by a terminal (Abstract)(Fig 7/710/720/730)(Fig 8)(Fig 9)(col 1 line

64-col. 3 line 45)." (See page 3, lines 8-11 of the Final Office Action). Appellant respectfully disagrees with this allegation. That is, none of these identified portions of Dent discloses or even suggests sampling the usage of network resources by an individual terminal and comparing a measurement of this sampled usage with measurements or calculations made by the individual terminal as required by independent claim 1 and its dependents.

Before examining each of these sections in detail, Appellant first notes that Dent primarily describes assisting a user of a mobile telephone to understand what charges he/she incurring on his/her telephone and providing some mechanisms for preventing undesired costs incurred by overuse of his/her telephone. The system disclosed by Dent is therefore "user-centric" (i.e., the benefits provided by Dent are selected primarily to the benefit of the user of the telephone). In contrast, the invention of claim 1 is "network-centric" (i.e., the benefits provided by the present invention are at least primarily directed to the benefit of a network operator rather than an individual terminal user).

The abstract of Dent discloses storing a critical value of a tariff in a smart card and using this critical value to provide visual or audio indication of a determined economic efficiency to a user of the terminal. The abstract further discloses the display of first and second icons and measures for controlling usage beyond "when the measured communication units exceed the stored critical values." There is absolutely no discussion or suggestion of sampling, or measuring only the portion of network resources used by

the terminal. The abstract discloses that the terminal measures in its entirety the usage by the terminal of the network resources in a conventional manner. Since the abstract of Dent does not disclose sampling usage of the network resources by the terminal, it further does not disclose comparing the sampled usage with usage measured by the terminal itself.

Fig. 7 illustrates the overall method proposed in Dent. In step 710, a critical value is stored in the terminal. The critical value is a point at which the tariff changes (e.g., the point at which the "inclusive minutes" in a particular mobile phone tariff have been consumed). In step 720, the terminal measures the communications units used by the terminal. This involves measuring the communications units in their entirety and not therefore performing any sampling.

In step 730, the economic efficiency of the operation of the terminal is determined based on the measured communications units consumed and the stored critical value. There is no precise explanation of how this is done in relation to Fig. 7. However, Dent describes how this might be done in relation to Fig. 9 (see col. 7, lines 39-62). Col. 7, lines 39-62 describes calculating a projected number of communications units used during a complete billing cycle based on the number of units used thus far (measured in their entirety) based on the average rate of consumption of communications units to the current point in time. This projected usage is then compared with the "critical value" previously stored and if the comparison indicates that this critical value is projected to be

exceeded by the end of the billing period, then the economic efficiency is determined to be in a non-efficient category, otherwise it is determined to be in an efficient category. This process, however, does not involve performing any sampling. All of the communications units which are consumed by the user are measured in their entirety. This information is then used to form a projected usage. This is clearly very different from sampling usage of the terminal by measuring a portion only of the units consumed by the terminal.

In step 740, measures to control usage of communications units are initiated based on determined economic efficiency (i.e., if the determined projected usage indicates that the usage currently falls in a non-efficient category). Again, neither the terminal nor any other element is performing sampling of the consumption by the terminal of communications units.

The above discussion of Fig. 7 shows that there is no sampling being performed at any time. Rather, the terminal measures all usage by the terminal of communication units. Figs. 8 and 9 are similar in their essentials to Fig. 7 except that they describe slightly more detailed methods of performing the method of the invention described in Dent with the added sophistication of having two critical values stored and (in Fig. 9) the added sophistication of calculating a projected efficiency based on an average rate of consumption thus far in the billing cycle. Again, there is no disclosure of performing sampling as claimed. Also, there would be no point in the terminal performing sampling

of the communications units used as it measures this in its entirety and can therefore use the full information available to it for performing its projections.

Turning now therefore to col. 1, line 64 to col. 3, line 45 (cited by the Final Office Action), this portion again sets out the basic method of the invention described in Dent. This method involves storing one or more critical values of the consumption of communications units in the terminal, measuring (in its entirety) the actual consumption of communications units by the terminal and performing an operation if the comparison of the stored critical value of consumption with the measured actual consumption indicates that the terminal is being used inefficiently (or is projected to be used inefficiently) given the actual measured usage thus far in the billing cycle. There is no discussion anywhere of sampling being performed either by the terminal itself or any other entity.

Claim 24 depends at least indirectly from claim 1 and is therefore deemed allowable for at least the reasons discussed above with respect to claim 1. Claim 24 further requires "...in which a step of policing the classification of packets to determine the eligibility of a packet for a respective class of service is carried out at a location remote from the router." Neither Takeuchi nor Dent teaches this further limitation.

CONCLUSION

For all of the reasons set forth above, it is respectfully requested that this appeal be granted and that the rejections discussed above be reversed.

Respectfully submitted,

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APPENDIX OF CLAIMS ON APPEAL

1. A method of operating a communications network comprising:

a) measuring at each of a plurality of customer terminals usage by the respective customer terminal of network resources;

b) subsequently calculating a network usage charge from the measurement data generated by step (a); and

c) sampling usage of the network resources by at least one of the customer terminals by measuring a portion of the usage only by the at least one of the customer terminals and comparing this measurement, with respect to the sampled usage, with one or both of the usage of network resources measured by the at least one customer terminal in step (a) and the network usage charge calculated in step (b).

4. A method according to claim 1, further comprising a step of aggregating measurement data produced by a series of measurements at a respective customer terminal.

5. A method according to claim 1, further comprising storing the measurement data.

6. A method according to claim 5, including storing with the measurement data identifying a tariff applicable to the said measurement data.

7. A method according to claim 1 including communicating data generated by step (a) to a network accounting object controlled by a network operator.

8. A method according to claim 7, including communicating to the network accounting object a usage charge calculated from the measurement data.

9. A method according to claim 1, including communicating measurement data to a system remote from the customer terminal.

10. A method according to claim 7, wherein sampling the usage is carried out by a network operator and comprises sampling part only of the traffic communicated between a customer terminal and the network and, for the sampled traffic, further comprises comparing the sampled network usage with data communicated from the customer terminal to the network accounting object and thereby detecting any discrepancy.

11. A method according to claim 1 in which a network accounting object is configurable to receive data from a measurement object controlled by a network operator or from a customer terminal.

12. A method according to claim 11, in which a customer accounting object associated with the customer terminal is configurable to direct data to the network accounting object.

13. A method according to claim 11, including switching the network accounting object from a first configuration in which data is received from the said measurement object and another configuration in which data is received from the customer terminal in response to a control signal received at the network accounting object.

14. A method according to claim 1 further comprising communicating a tariff to each of the customer terminals, and calculating at each of the terminals from the tariff and from accounting data the network usage charge.

15. A method according to claim 1 in which the communications network is a federated data network comprising a plurality of network domains.

16. A method according to claim 15 including

communicating traffic between a customer terminal and a first network domain connected to the customer terminal,

further communicating the said traffic between the first network domain and a second network domain connected to the first network domain;

communicating network usage data from the customer terminal to a first network accounting object in the first domain;

communicating accounting data between the first network accounting object and a second network accounting object in the second domain.

17. A method according to claim 16, including determining from a current routing table in the first network domain the identity of a second domain, which second domain is communicating data with the customer terminal via the first network domain, and communicating network usage data for the customer terminal to the second domain identified by the current routing table.

18. A method according to claim 1 in which the step of measuring includes counting the quantity of data communicated in packets transmitted between the customer terminal and the communications network.

19. A method according to claim 18, including measuring both packets received by the customer terminal and packets sent by the customer terminal.

20. A method according to claim 1, in which a payment for network usage is made to a third-party clearer.

21. A method according to claim 1, including automatically varying a tariff for network usage in dependence on loading of the network, and calculating a charge for network usage by applying the tariff to the measurement data.

22. A method according to claim 1, including transmitting packets on the network with a plurality of different classes of service.

23. A method according to claim 22, including passing the said packets through a packet router, and in the packet router determining the classes of service applicable to the packets, and scheduling packets differently depending on the respective class of service.

24. A method according to claim 23, in which a step of policing the classification of packets to determine the eligibility of a packet for a respective class of service is carried out at a location remote from the router.

25. A method according to claim 24, in which the step of policing is carried out at a customer terminal.

26. A method of operating a packet network providing a plurality of different service levels, the method including passing the said packets through a packet router, and in the packet router determining a class of service for packets, scheduling packets differently depending on the respective class of service and, at a location remote from the router, policing the class of service levels of packets to determine the eligibility of a packet for a respective class of service.

27. A method of operating a communications network comprising a plurality of network domains, the method including determining a price for a data transmission between one domain and an adjacent domain by:

a) announcing, by the one domain, both a price for receiving the data from the adjacent domain and a price for transmitting data into the adjacent domain;

b) announcing, by the adjacent domain, both a price for receiving data from the one domain and a price for transmitting data into the one domain;

c) calculating an edge price for the data transmission from the difference between either the price for receiving announced in step (a) and the price for transmitting announced in step (b) or the price for transmitting announced in step (a) and the price for receiving announced in step (b), depending on the direction of transmission of the data.

28. A method according to Claim 27, in which each of the domain announces a plurality of different sets of prices corresponding to different respective classes of service.

29. A method of operating a communications network including:

(a) establishing a data flow from an originating customer connected to the network to at least one destination customer connected to the or each network;

(b) communicating tariff data from the or each network operator to a clearing entity;

(c) communicating tariff data for end-to-end flow from the clearing entity to at least one of the originating and destination customers;

(d) measuring the quantity of data flowing from the originating customer into the network and the quantity of data flowing out of the network to the destination customer;

(e) communicating measurement data generated by step d to the clearing entity;

(f) at the clearing entity calculating a charge from the measurement data and the tariff;

(g) making a payment from the clearing entity to the network operator in accordance with the calculated charge; and

(h) communicating a bill in accordance with the end-to-end tariff from the clearing entity to at least one of the originating customer and the destination customer.

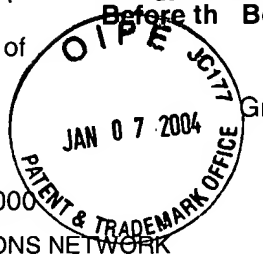
30. A method according to claim 10 including penalising a customer when a discrepancy is detected.

32. A communications network arranged to operate by a method according to claim 1.

33. A customer terminal arranged to operate by a method according to claim 1.

39. A method according to claim 25, in which the policing by the customer is randomly audited concurrently with, or subsequently to, the respective data flow.

IN THE [redacted]TED STATES PATENT AND TRADEM OFFICE
Before th Board of Patent Appeals and Interferences



In re Patent Application of Atty Dkt. 36-1384
C# M#
BRISCOE et al. Group Art Unit: 3624
Serial No. 09/674,706 Examiner: Akers, G.
Filed: November 6, 2000 Date: January 7, 2004
Title: COMMUNICATIONS NETWORK

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Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

☐ **Correspondence Address Indication Form Attached.**

☐ NOTICE OF APPEAL
Applicant hereby **appeals** to the Board of Patent Appeals and Interferences from the last decision of the Examiner. ($ 330.00) $

☒ An appeal **BRIEF** is attached in triplicate in the pending appeal of the above-identified application ($ 330.00) $ 330.00

☐ Credit for fees paid in prior appeal without decision on merits -$ ( )

☐ A reply brief is attached in triplicate under Rule 193(b) **(no fee)**

☐ Petition is hereby made to extend the current due date so as to cover the filing date of this paper and attachment(s) **($110.00/1 month**; $420.00/2 months; **$950.00/3 months**; $1480.00/4 months) $

SUBTOTAL $ 330.00

☐ Applicant claims "Small entity" status, enter ½ of subtotal and subtract -$( )
☐ "Small entity" statement attached.

SUBTOTAL $ 330.00

Less month extension previously paid on -$(0.00)

TOTAL FEE ENCLOSED $ 330.00

Any future submission requiring an extension of time is hereby stated to include a petition for such time extension. The Commissioner is hereby authorized to charge any deficiency, or credit any overpayment, in the fee(s) filed, or asserted to be filed, or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our **Account No. 14-1140.** A duplicate copy of this sheet is attached.

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